

Claims

What is claimed is:

- [c1] A method for determining interval anelliptical parameters, comprising:
 - determining normal moveout velocities and effective anelliptical parameters from seismic data traces;
 - determining interval velocities from the normal moveout velocities;
 - inverting the normal moveout velocities, effective anelliptical parameters and interval velocities to obtain the interval anelliptical parameters.
- [c2] The method of claim 1 wherein the inverting comprises damped least squares inversion.
- [c3] The method of claim 1 further comprising preconditioning the inverting.
- [c4] The method of claim 1 wherein the inverting comprises solving a system of linear equations by conjugate gradients.
- [c5] The method of claim 1 wherein the determining normal moveout velocities and effective interval parameters are performed by scanning a time migrated trace gather, the time migrated trace gather accounting for ray bending.
- [c6] The method of claim 1 further comprising generating a prestack depth migrated image using the interval velocities and interval anelliptical parameters.
- [c7] A computer program stored in a computer readable medium, the program including logic operable to cause a programmable computer to perform steps, comprising:
 - determining normal moveout velocities and effective anelliptical parameters from seismic data traces;
 - determining interval velocities from the normal moveout velocities;
 - inverting the normal moveout velocities, effective anelliptical parameters and interval velocities to obtain interval anelliptical parameters.

- [c8] The computer program of claim 7 wherein the inverting comprises damped least squares inversion.
- [c9] The computer program of claim 7 further comprising preconditioning the inverting.
- [c10] The computer program of claim 7 wherein the inverting comprises solving a system of linear equations by conjugate gradients.
- [c11] The computer program of claim 7 wherein the determining normal moveout velocities and effective interval parameters are performed by scanning a time migrated trace gather of the seismic data traces, the time migrated gather accounting for ray bending.
- [c12] The computer program of claim 7 further comprising generating a prestack depth migrated image using the interval velocities and interval anelliptical parameters.